

MIZORAM PUBLIC SERVICE COMMISSION

DEPARTMENTAL EXAMINATIONS FOR JUNIOR ENGINEER AND DRAFTMAN-I UNDER PUBLIC HEALTH ENGINEERING DEPARTMENT, GOVERNMENT OF MIZORAM. MARCH -2020.

CIVIL ENGINEERING PAPER - II

Time Allowed : 3 hours

FM : 100 PM : 40

Marks for each question is indicated against it.

1. What do you mean by Safe Bearing Capacity of Soil? Design the size of a foundation for an isolated footing of a building. There is only axial load coming from a building through the column to the footing (foundation). The axial load is 2000kN. The safe Bearing capacity of soil is 250kN/m². Draw a rough sketch of the foundation. (3+7=10)
2. What are the standard sizes of bricks? (2)
3. What is the water absorption limit in terms of percentage for 1st class brick? (2)
4. What is the test for soundness of brick? (2)
5. What are the characteristics of good building stone? (4)
6. What do you mean by Water Cement ratio? Describe briefly the importance of controlling Water Cement ratio in concrete. (2+3=5)
7. Design RCC slab. The centre to centre spacing of the beam over which the slab is supported is 3.7m. Live load on the slab may be taken as 3kN/m². Assume fixed support over the beams. Give reinforcement details. (10)
8. What is the permissible limit of Turbidity for Drinking water as per Indian Standard Drinking water Specifications? (2)
9. What is the permissible range of pH value for Drinking water as per Indian Standard Drinking water Specifications? (2)
10. What are the factors affecting per capita demand of water? Elaborate briefly. (10)
11. Draw the diagram showing section of a slow sand filter and naming the different components. (8)
12. What are the different methods of Disinfection of water? (4)
13. What do mean by the term 'Doses of Chlorine'? What is the optimum dose of chlorine for a given water? (2+2=4)
14. What is the minimum reinforcement requirement for RCC water tank for sections upto 100mm thickness? (2)
15. What is the minimum grade of concrete for RCC water tank? (2)

16. What is the minimum quantity of cement in the concrete for RCC water tank? (2)
17. What is the minimum cover to reinforcement for RCC water tank? (2)
18. What are the different methods of rain water harvesting? Describe why rain water harvesting is important for region like Mizoram? (5+5=10)
19. Explain how refuse are collected? What governs the frequency of refuse collection? (4+4=8)
20. What do you mean by incineration of refuse? (4)
21. What are the methods of communication of communicable diseases? (5)

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